

Application No.: 10/015,348

Attorney Docket No.: GB 010002

Amendments to the Claims:

The following listing of claims replaces all prior versions, and listings, of claims in the present application.

Listing of the Claims:

Claim 1 (currently amended): A method, comprising:

determining a value of a signal, in which N previously detected bits (where N is at least 2) of a demodulated bit stream are used to select which one of a plurality of threshold levels against which a current demodulated bit is to be compared in a bit slicer and is to be updated using the current demodulated bit;

subtracting the demodulated signal from one of a plurality of selected preset default values to produce a current dc offset estimate, deriving a mean dc offset estimate from the current dc offset estimate and a plurality of preceding dc offset estimates, combining the mean dc offset estimate with the selected threshold value and applying the combined signal to a threshold input of the bit slicer

adjusting a responsiveness of the mean dc offset estimate with respect to drift;

oversampling the demodulated bit stream by a factor M, where M is an integer on the order of 20;

intermittently integrating at least one sample in the vicinity of the M/2 sample of each of at least 2 bit periods to generate a demodulated signal to be compared with the selected one of the threshold values;

comparing a result of the integrating with the selected threshold level; and

using the result to update the selected threshold value

Claim 2 (previously presented): A method as claimed in claim 1 further comprising providing P (where P is at least 2) mean estimators associated with each of the threshold levels, and for a selected one of the plurality of threshold levels obtaining an average value of the associated P mean estimators and using the result as the current selected one of the threshold values.

Claims 3-5 (cancelled)

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Claim 6 (previously presented): A method as claimed in Claim 1, further comprising: after oversampling the demodulated bit stream, weighting samples of the demodulated bit stream.

Claim 7 (canceled).

Claim 8 (currently amended): A method as claimed in claim 7 1, further comprising: subtracting the dc offset estimate from the demodulated signal prior to updating the selected threshold value.

Claim 9 (canceled).

Claim 10 (previously presented): A method of effecting dc offset compensation in a receiver having a variable threshold bit slicer, comprising selecting one of a plurality of preset default threshold values in accordance with a bit sequence formed by a current ( $n$ ) and ( $n - 1$ ) earlier bit values as determined by the variable threshold bit slicer, obtaining a demodulated signal integrated over at least 2 bit periods, subtracting the demodulated signal from the selected preset default threshold value to produce a current dc offset estimate, deriving a mean dc offset estimate from the current dc offset estimate and a plurality of preceding dc offset estimates, using the mean dc offset estimate to remove an effect of dc offset in determining the value of the demodulated signal, and adjusting a responsiveness of the mean dc offset estimate with respect to drift.

Claim 11 (previously presented): A method as claimed in Claim 10, wherein the mean dc offset estimate is combined with the selected threshold value and in that the combined signal is applied to a threshold input of the bit slicer.

Claim 12 (canceled).

Claim 13 (currently amended): A receiver having a variable threshold slicer, comprising means for deriving a demodulated bit stream, means for storing a plurality of threshold values, each of the plurality of threshold values being selectively adjustable, means for selecting one of the plurality of threshold values for comparison with a current bit and for adjustment in response to a sequence of  $N$  bits (where  $N$  is at least 2) received prior to the current bit and means for using the current bit to update the selected threshold value; and

means for subtracting the demodulated signal from a selected preset default value to produce a dc offset estimate, means for deriving a mean dc offset estimate from a current dc offset estimate and a plurality of preceding dc offset estimates, and means for combining the

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mean dc offset estimate with the selected one of the plurality of threshold values and for applying the combined signal to a threshold input of the variable threshold bit slicer;

means for adjusting the responsiveness of the mean dc offset estimate with respect to drift;

means for oversampling the demodulated bit stream by a factor M, where M is an integer on the order of 20, and means for intermittently integrating at least one sample in the vicinity of the M/2 sample of each of at least 2 bit periods to generate a demodulated signal to be compared with the selected one of the plurality of threshold values;

wherein the means for deriving the demodulated bit stream includes a non-continuous integrate and dump stage for integrating the demodulated bit stream over a predetermined number of bit periods and supplying a result to the variable threshold bit slicer and to the means for updating the selected threshold value.

Claim 14 (canceled)

Claim 15 (canceled)

Claim 16 (previously presented): A receiver as claimed in Claim 13, further comprising means for weighting the samples obtained by oversampling.

Claim 17 (canceled)

Claim 18 (canceled)